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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/587,316

07/26/2006

Souichi Iwasa

AI-423NP

4729

23995

7590

02/23/2010

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EXAMINER

BOEHLER, ANNE MARIE M

ART UNIT

PAPER NUMBER

3611

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,316	Applicant(s) IWASA ET AL.	
	Examiner Anne Marie M. Boehler	Art Unit 3611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/6/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-5, and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuboi (PGP 2001/0035310) in view of JA 2003-13989.

Tsuboi shows a power steering system 10 with a steering electric motor 130 having an output shaft 31, a speed reduction mechanism 35, 36, with an input shaft 32, and a power transmission joint 44 that couples the input and output shafts. The joint includes a first annular engagement member 41b, a second annular engagement member 42b, and an elastic member 40 with an annular main body and engagement arms between the members. Power transmission faces of the engagement arms engage engagement projections on the engagement members.

Tsuboi fails to specifically disclose differences in the size of engagement surfaces or differences in thickness or spacing of the engagement arms or projections. However, mechanical systems are not perfectly manufactured and will include differences among parts, even those designed to be essentially the same in configuration. Also, JA 2003-013989 shows an elastomeric member 17 in a power transmission joint that includes an annular main body 17b with projecting arms 17a and opposite faces of the arms have different engagement surfaces. Therefore, it would have been obvious to one of ordinary skill in the art to manufacture the engagement arms and projections of the Tsuboi device with differences in surface configuration, as

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taught by JA 2003-013989, in order to provide progressive resistance to movement in between the shafts. It would also have been obvious to provide differences in thickness, and angular spacing, in order to avoid unnecessary difficulty and expense in manufacturing.

3. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuboi and JA 2003-13989 as applied to claims 1-5, 8, and 9 above, and further in view of Byrom (USPN 2,135,634).

Tsuboi fails to teach cam surfaces on the engagement projections and the engagement arms.

Byrom teaches providing cam surfaces (curvature of the edges of the projections 14 and radial arms 20, as described in col. 2, lines 20-23), that can cause compression of the elastic member during axial movement of the engagement members.

It would have been obvious to one of ordinary skill in the art to provide the Tsuboi joint with cam surfaces on the engagement arms and engagement projections, as taught by Byron, in order to minimize friction and wear when the elastic member runs out of alignment.

5. Applicant's arguments filed 9/29/2009 have been fully considered but they are not persuasive.

Applicant again argues that the Yutaka reference (JP 2003-013989) fails to teach transmission faces having differing interference fit between different radial surfaces. Applicant accomplishes this, at least in part, by making the contact surface d1 different from surface d2. Thereby, the interference resistance will be different on the opposite

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sides. Similarly, the Yutaka shows a configuration where the contact surface at interference 18a3 is different than the contact surface at interference 16e and this difference in interference is symmetrical about the axis of the gear. This difference in contact surface creates a difference in interference fit, as with applicant's invention. Therefore, the combination indicated above is believed to teach the claimed invention, as broadly claimed.

Applicant also argues that Byrom lacks a cam surface. The examiner disagrees. Byrom shows angled surfaces on the engagement arms, shown by dashed lines in all of the figures, but best shown in Figure 5. These cam surfaces together with contacting surfaces on the engagement members allow that, when the first and second engagement members move axially relative to the other, they will compress the elastic member and increase compression in the circumferential direction. Therefore, the claimed structure is believed to be taught.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne Marie M. Boehler whose telephone number is 571-272-6641. The examiner can normally be reached on 7:30-5:00, Monday-Friday, with work at home on Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley Morris can be reached on 571-273-8300. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Anne Marie M Boehler/
Primary Examiner, Art Unit 3611

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Primary Examiner
Art Unit 3611

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